

# OSH/ADA Working Group Meeting



June 11, 2008  
West Dining Room  
James Madison Memorial Building

Office of Attending Physician

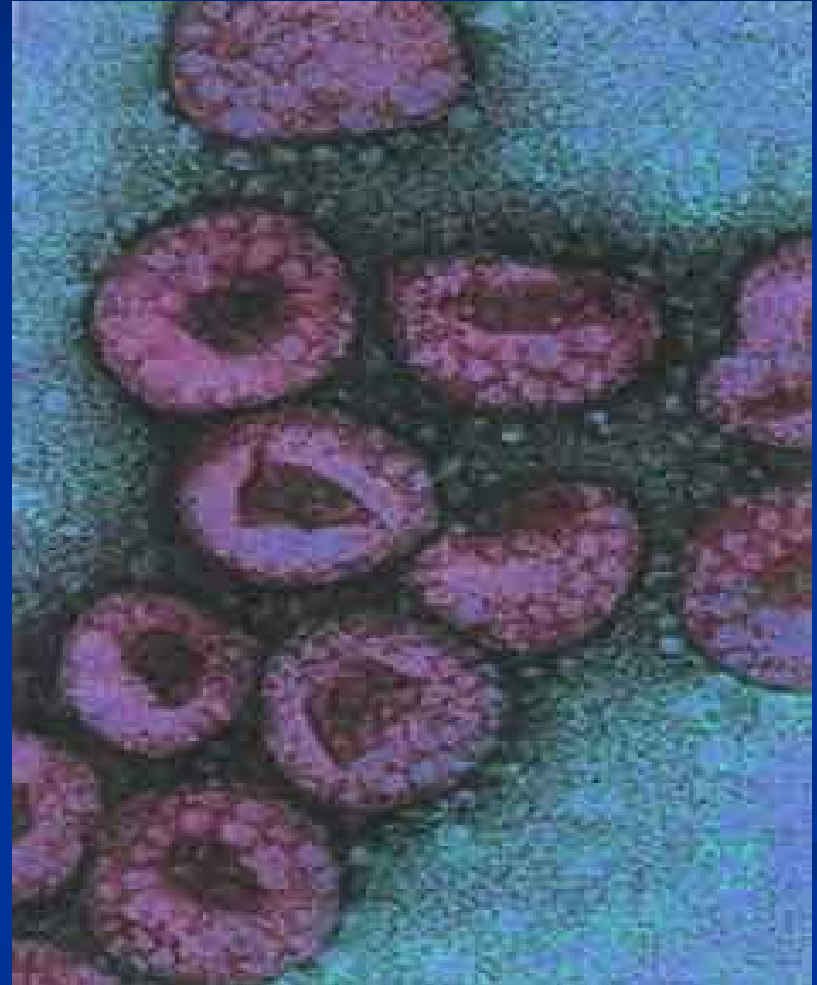
# Pandemic Flu Update

June, 2008

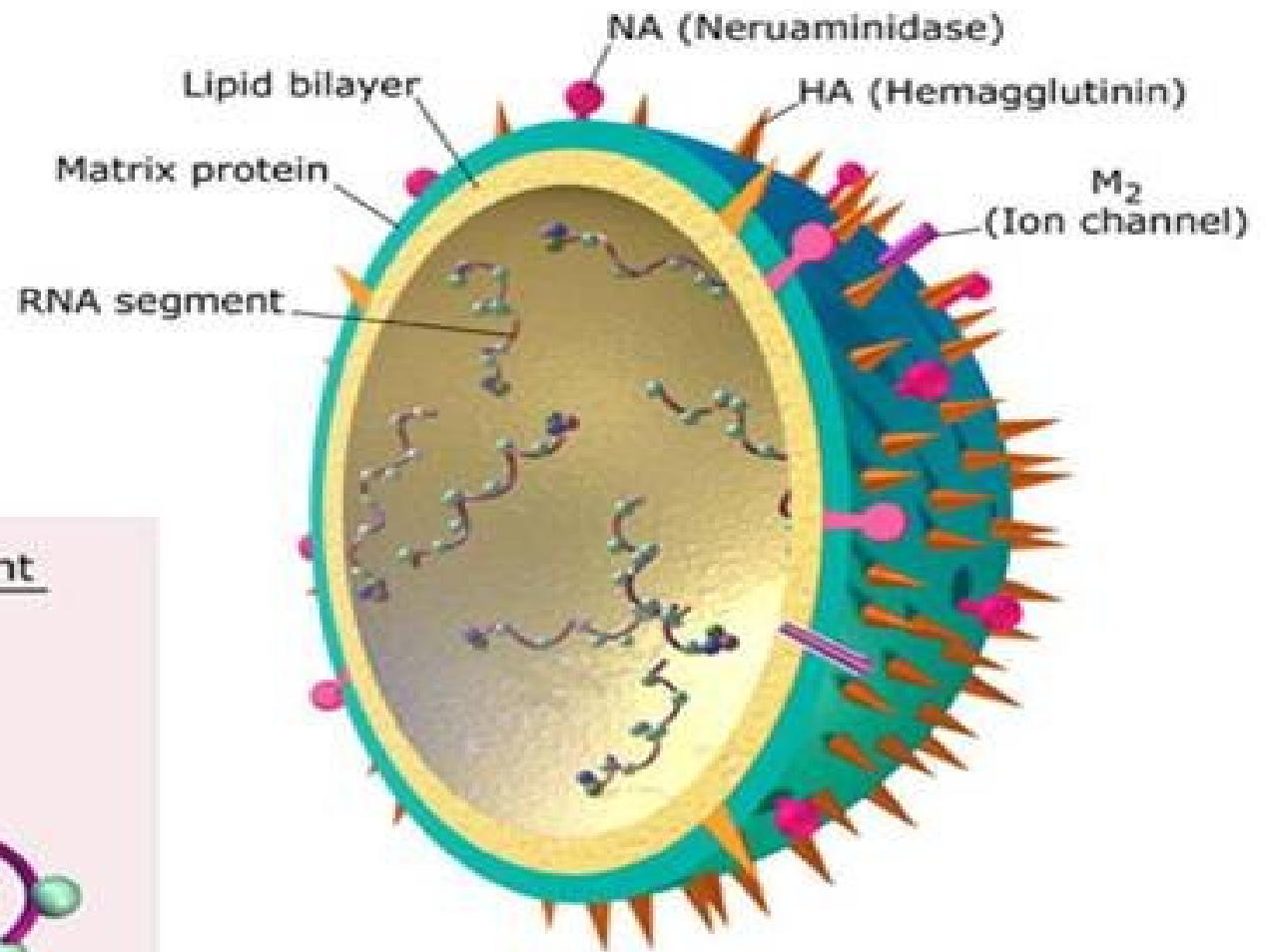


# Avian Influenza

- Basics
- Terminology
- Update
- Planning Update

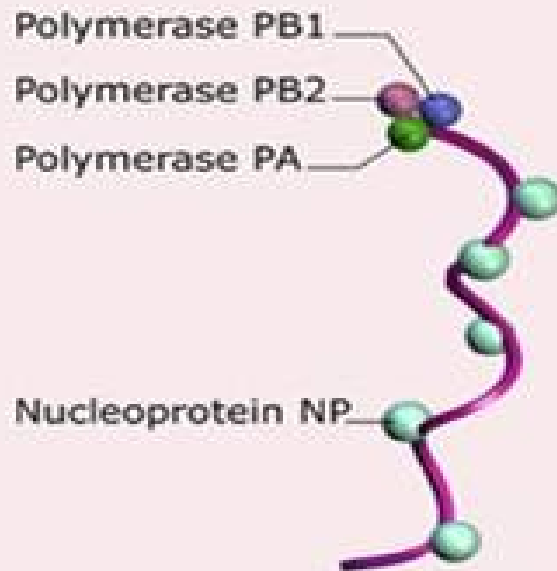






### Detail of RNA Segment

Showing RNP structure  
(transcriptase complex)



# Terminology

- **Seasonal Flu** – predictable seasonable pattern. Usually some degree of immunity in population.
- **Avian Flu** – Any of several influenza viruses that infect primarily birds but may on occasion infect a human. Currently HPAI H5N1 is a avian flu.
- **Pandemic Flu** - A global influenza pandemic occurs when a new influenza A virus emerges for which there is little or no immunity in the human populations. The virus may cause serious illness and then spread from human to human easily.

# Seasonal vs. Pandemic Flu

Seasonal	Pandemic
Approx 36,000 deaths annually	Death rates variable (American) 1918: 500,000 deaths 1957 70,000 deaths 1968 34,000 deaths
Some degree of Immunity in humans	New virus with little to no immunity in humans
Predictable	Unpredictable with 2-3 waves
Vaccines available	Vaccines not available for 6 months after it presents

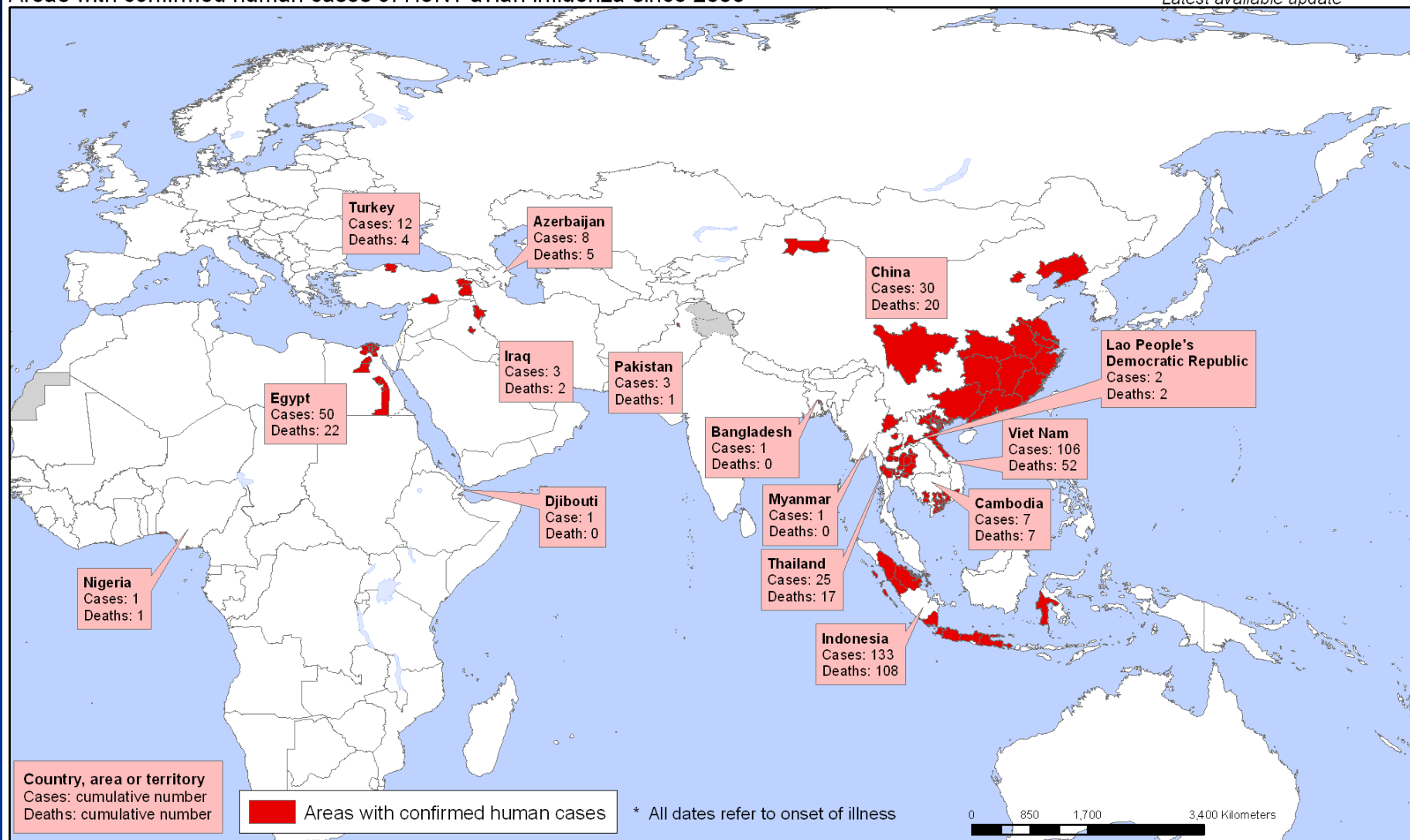
WHO Phases		Federal Government Response Stages	
INTER-PANDEMIC PERIOD			
1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human disease is considered to be low.	0	New domestic animal outbreak in at-risk country
2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.		
PANDEMIC ALERT PERIOD			
3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.	0	New domestic animal outbreak in at-risk country
		1	Suspected human outbreak overseas
4	Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.	2	Confirmed human outbreak overseas
5	Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).		
PANDEMIC PERIOD			
6	Pandemic phase: increased and sustained transmission in general population.	3	Widespread human outbreaks in multiple locations overseas
		4	First human case in North America
		5	Spread throughout United States
		6	Recovery and preparation for subsequent waves

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# Areas with confirmed human cases of H5N1 avian influenza since 2003 \*

Status as of 28 May 2008  
Latest available update



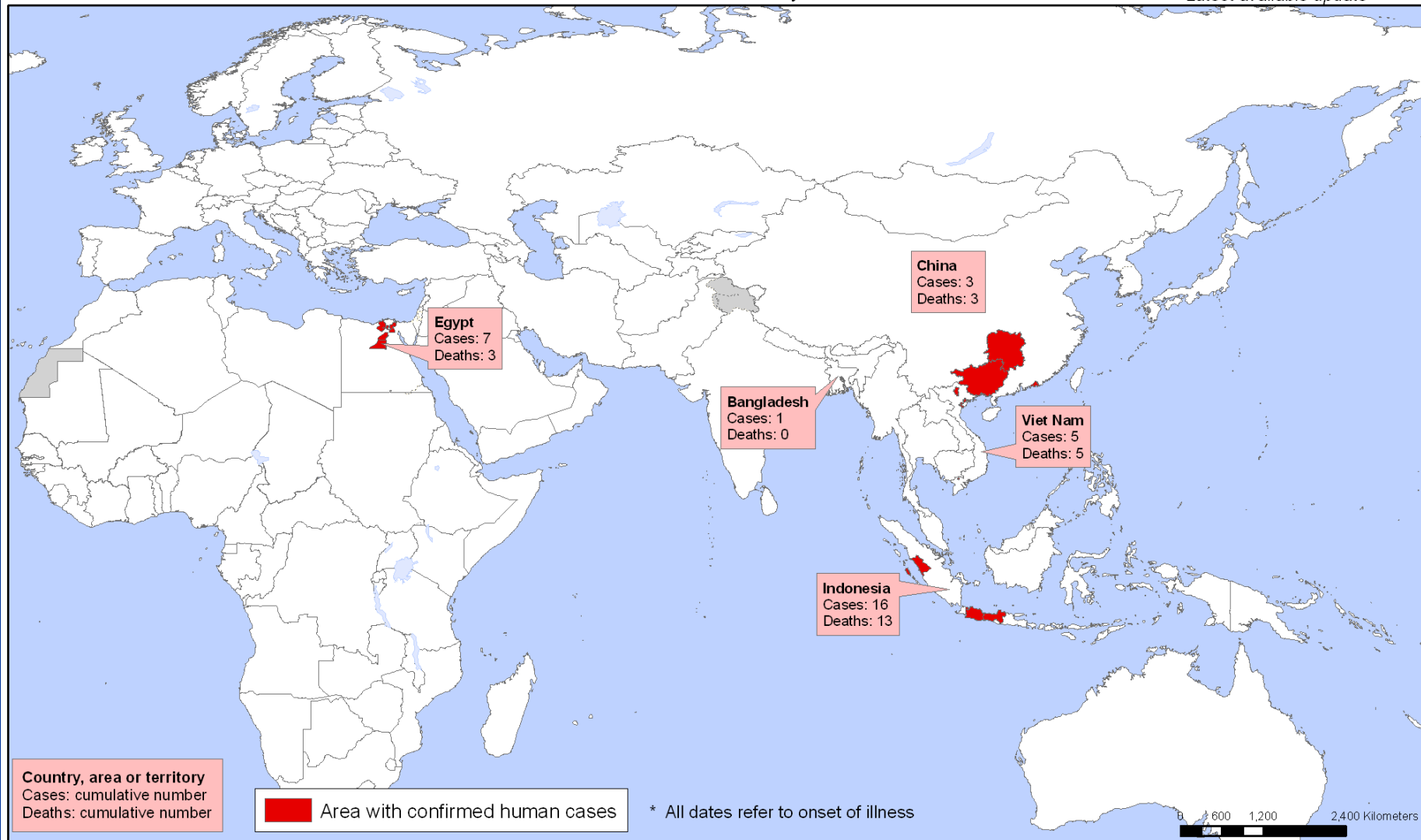
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO  
Map Production: Public Health Mapping and GIS  
World Health Organization  
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Unclassified

# Areas with confirmed human cases of H5N1 avian influenza since 1 January 2008 \*

Status as of 28 May 2008  
Latest available update



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

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# Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO

28 May 2008

Country	2003		2004		2005		2006		2007		2008		Total	
	case	death	cases	death	case	death	case	death	case	death	case	death	cases	deaths
Bangladesh	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Azerbaijan	0	0	0	0	0	0	8	5	0	0	1	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	0	0	7	7
China	1	1	0	0	8	5	13	8	5	3	3	3	30	20
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	7	3	50	22
Indonesia	0	0	0	0	19	12	55	44	42	37	16	13	133	108
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	3	2
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	5	5	106	52
Total	4	4	46	32	97	42	115	79	88	59	32	24	383	241

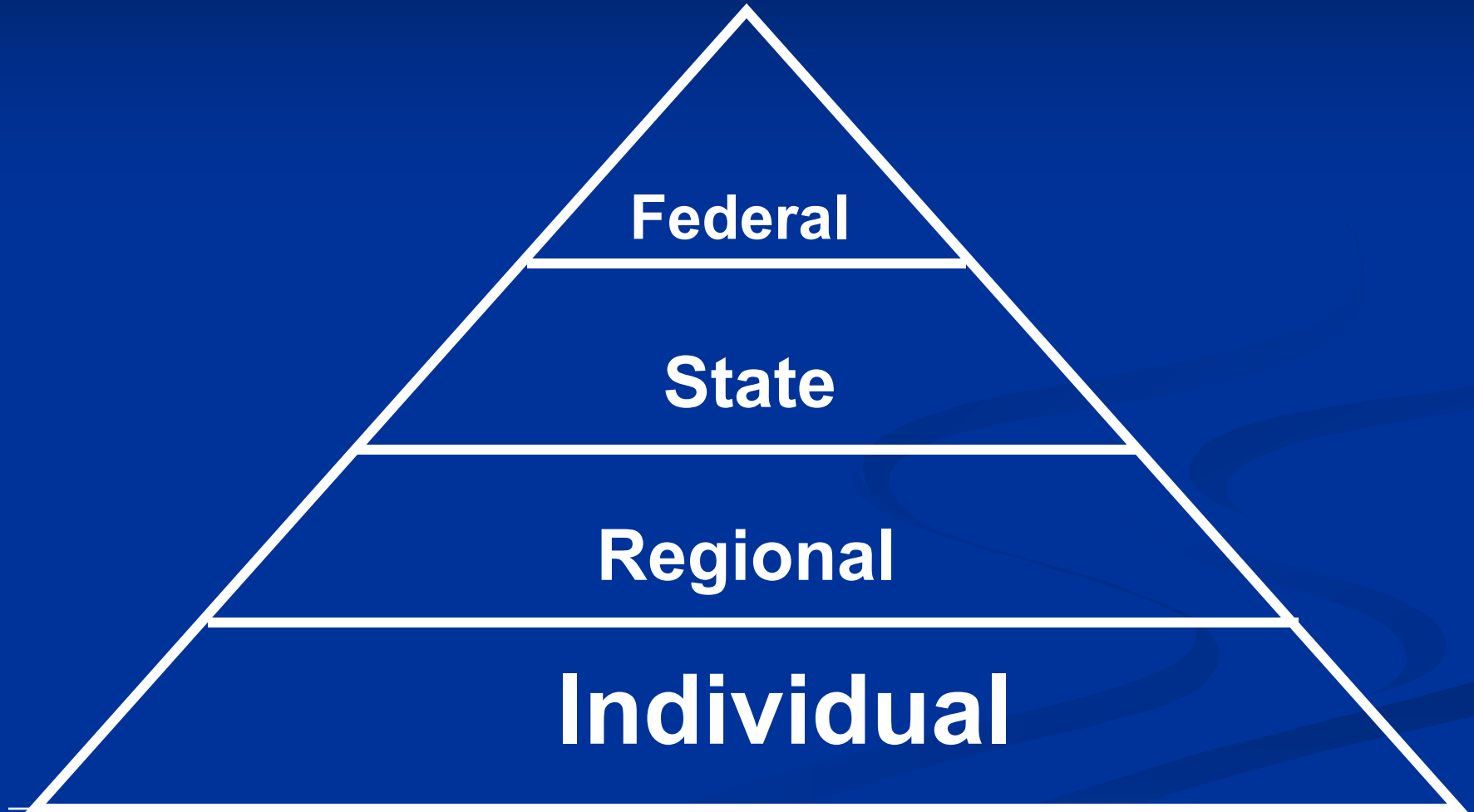
Total number of cases includes number of deaths.  
WHO reports only laboratory-confirmed cases.





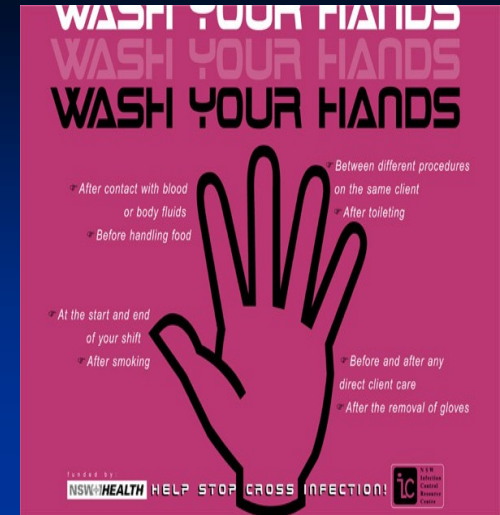


# Public Preparedness



# Individual

- Planning – Family, Work
  - Telecommuting
  - Pre-established sick leave policies
  - Food/Water supplies
- Avoiding large gatherings – social distancing
- Public Health Measures
  - Hygiene
  - Voluntary Quarantine/Isolation



# Individual

- Establish care with a primary provider
- Ensure you have health insurance
- Ensure you have an adequate supply of your daily medications – approx 6 weeks supply
- Get the annual Flu shot and any other immunizations

# Individual and Family Response

Response	Individuals and Families	At School	At Work	Faith-Based, Community, and Social Gatherings
Be Prepared	Review Individuals and Families Planning Checklist <a href="http://www.pandemicflu.gov">www.pandemicflu.gov</a>	Review School Planning Checklists <a href="http://www.pandemicflu.gov">www.pandemicflu.gov</a>	Review Business Planning Checklist <a href="http://www.pandemicflu.gov">www.pandemicflu.gov</a>	Review Faith-Based and Community Organizations Preparedness Checklist <a href="http://www.pandemicflu.gov">www.pandemicflu.gov</a>
Be Aware	Identify trusted sources for information; stay informed about availability/use of anti-viral medications/vaccine	Review school pandemic plan; follow pandemic communication to students, faculty, and families	Review business pandemic plan; follow pandemic communication to employees and families	Stay abreast of community public health guidance on the advisability of large public gatherings and travel
Don't Pass it On	If you are ill--stay home; practice hand hygiene/cough etiquette; model behavior for your children; consider voluntary home quarantine if anyone ill in household	If you are ill--stay home; practice hand hygiene/cough etiquette; ensure sufficient infection control supplies	If you are ill--stay home; practice hand hygiene/cough etiquette; ensure sufficient infection control supplies	If you are ill--stay home; practice hand hygiene/cough etiquette; modify rites and religious practices that might facilitate influenza spread
Keep Your Distance	Avoid crowded social environments; limit non-essential travel	Prepare for possible school closures; plan home learning activities and exercises; consider childcare needs	Modify face-to-face contact; flexible worksite (telework); flexible work hours (stagger shifts); snow days	Cancel or modify activities, services, or rituals; follow community health social distancing recommendations
Help Your Community	Volunteer with local groups to prepare and assist with emergency response; get involved with your community as it prepares	Contribute to the local health department's operational plan for surge capacity of health care (if schools designated as contingency hospitals)	Identify assets and services your business could contribute to the community response to a pandemic	Provide social support services and help spread useful information, provide comfort, and encourage calm

# Employers

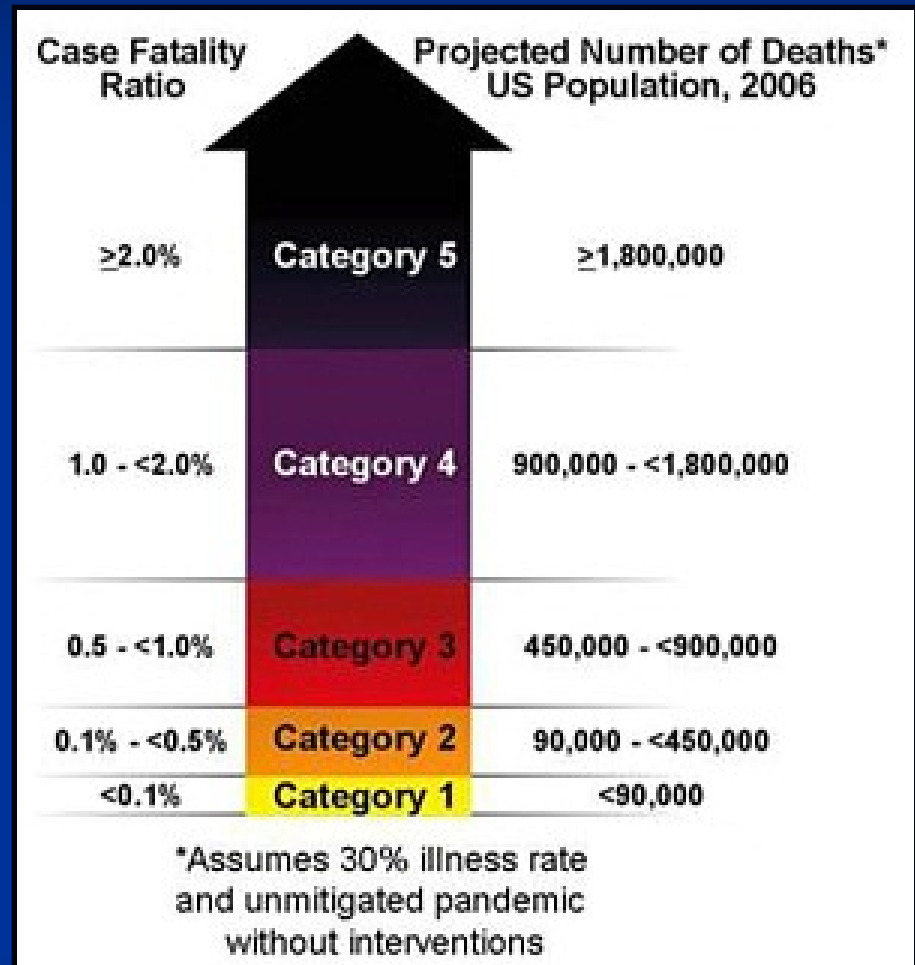
- Permissive Leave Policies
- Social Distancing (telework, teleconference, email)
- Controls to decrease transmission
- Medical Screening
- Control Access to public



# Prevention

## ■ Non-Pharmacologic Interventions

- Hygiene
- Triage – medical screening facilities
- Self-Isolation
- School/Day-Care Closings
- Avoidance of Crowds (Social Distancing)
- Occupational Use of Masks / Respirators



# Prevention (cont.)

## ■ Pharmacologic Interventions

- Prophylaxis
- Anti-viral medications: Tamiflu, Relenza
- Vaccine production and distribution

# Treatment

- Done at Local health clinics and hospitals
- Anti-virals may not be effective due to resistance and uncertain dosing.
- Treatment is largely supportive.

# OAP During Pandemic

- Assist with planning
- Education
- Coordination – establish relationships with medical assets
- Encourage and promote personal prevention
- Provide medical recommendations to Leadership and emergency planners

# OAP During Pandemic (cont.)

- Medical screening on Capitol Hill
  - Two screening facilities on Capitol Hill (House and Senate)
  - Screening centers designed to identify concerning symptoms and to send those afflicted home or to their local provider
  - Not intended to be a place to receive treatment



# Progress

- Continued Progress and Research
  - Prevention Strategies and Modeling
  - Antiviral science
  - Treatment Strategies
  - Vaccine Research
  - Role of Immune Survivors

# Educational and Planning Resources

- OAP website for links:
  - <http://attendingphysician.house.gov/>
- [www.cdc.gov](http://www.cdc.gov)
- [www.Pandemicflu.gov](http://www.Pandemicflu.gov)
- [www.who.int/csr/avian\\_influenza/en/index.html](http://www.who.int/csr/avian_influenza/en/index.html)
- [www.pandemicflu.gov/plan/community/commitigation.html](http://www.pandemicflu.gov/plan/community/commitigation.html)

# QUESTIONS?

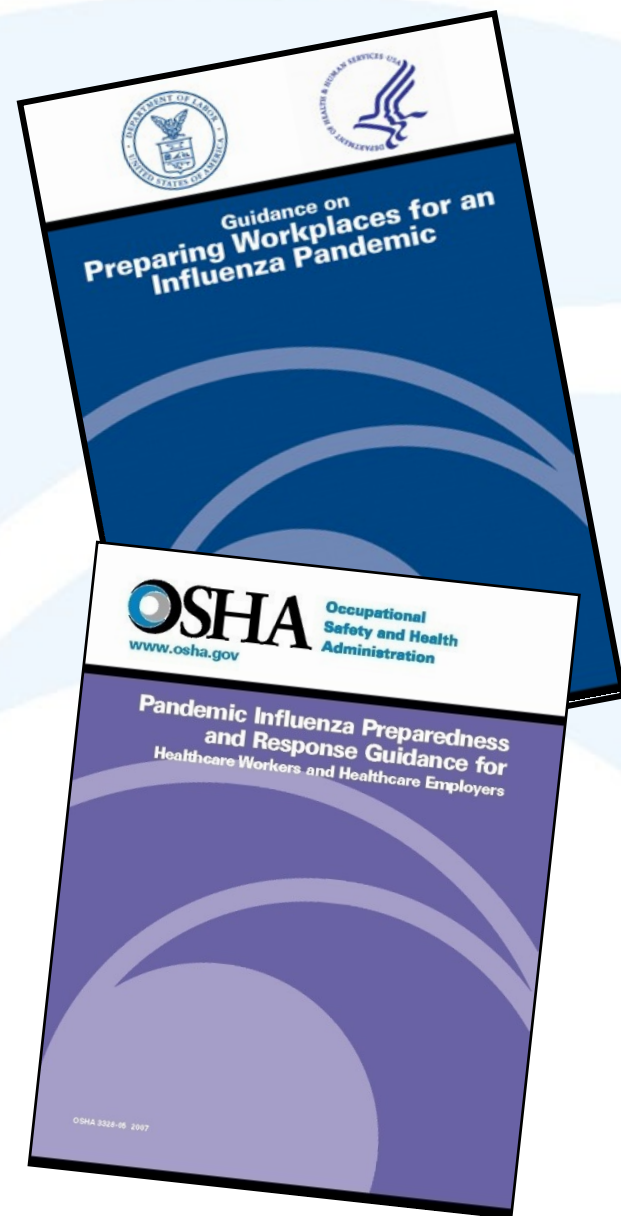
# Preparing Workplaces for an Influenza Pandemic

**Andrew Levinson**  
**Directorate of Standards and Guidance**  
**Occupational Safety and Health Administration**

# Existing Guidance

DOL-OSHA in collaboration with HHS published a guidance product titled, *Preparing Workplaces for an Influenza Pandemic* (February, 2007). Provides guidance for general industry employers

DOL-OSHA also published a guidance product titled, *Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers* (June, 2007). Provides guidance for healthcare employers





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- **How to protect employees**
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- **Steps every employer can take**
- **Guidance for lower exposure risk workplaces**
- **Guidance for medium exposure risk workplaces**
- **Guidance for very high / high exposure risk workplaces**
- **Guidance for employees who live/travel abroad**

## **Seasonal Influenza**

- **Regular periodic outbreaks of respiratory illness.**
- **Vaccine prepared in advance.**

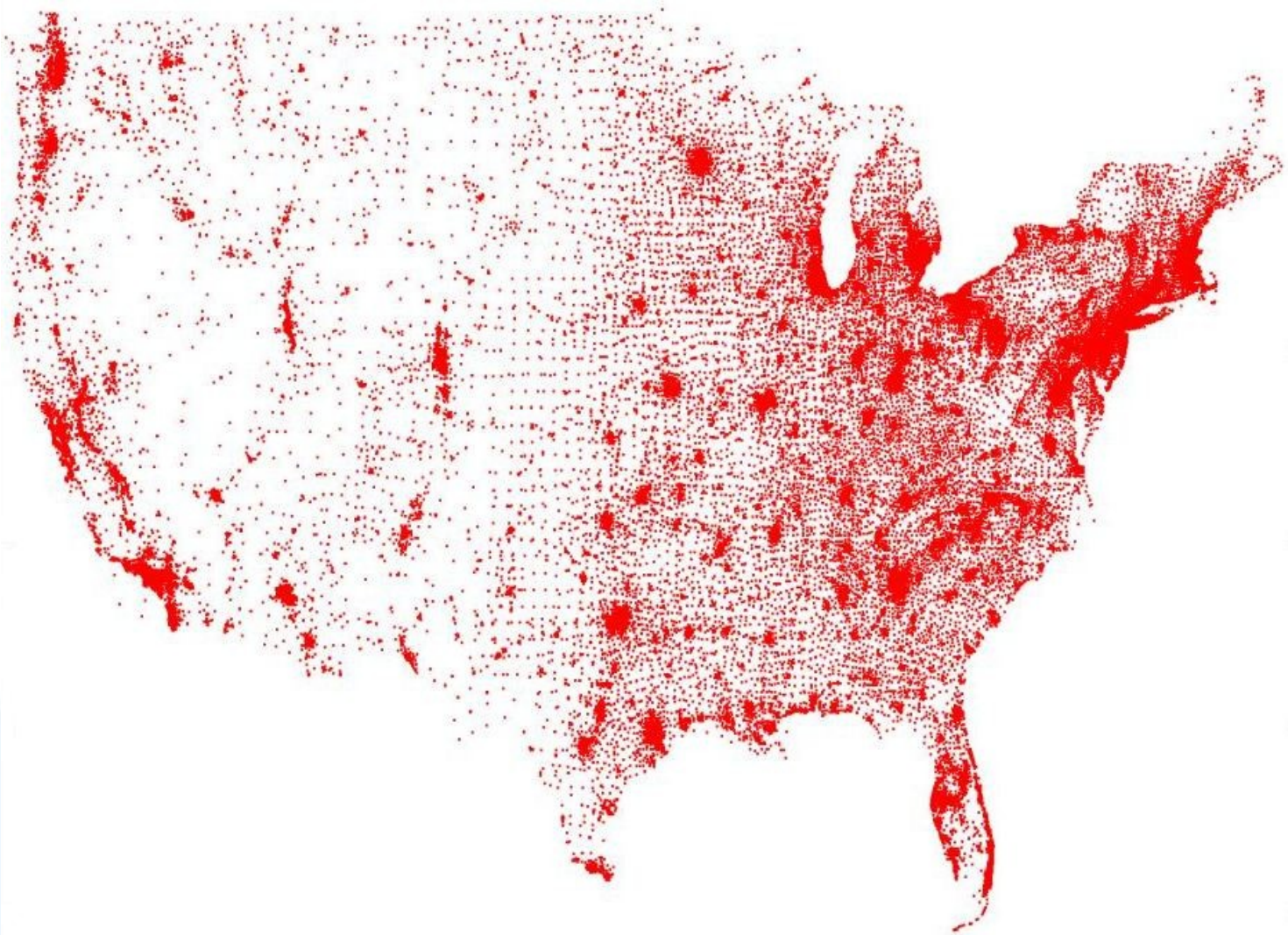
## **Avian Influenza (“Bird Flu”)**

- **A virus of wild birds and domestic poultry, usually of little threat to humans.**
- **Many forms of avian influenza of varying severity (LPAI vs. HPAI).**
- **The current strain of HPAI (H5N1) is very virulent and has shown a limited ability to infect humans.**

## **Pandemic Influenza**

- **A new strain of virus emerges, to which people have limited immunity, and spreads easily.**
- **A worldwide outbreak of illness.**
- **A vaccine will not be available for some time.**
- **Pandemic can vary in severity from mild to very severe.**

# The Pandemic Map



**Urban Areas Affected First -National Spread Within 1-2 Months**

# **How a Severe Pandemic Could Affect Workplaces**

- **Absenteeism – up to 40% of employees affected**
  - **Sick/dead employees**
  - **Caring for sick family members**
  - **Child care**
  - **Afraid to come to work**
- **Changes in Patterns of Commerce**
  - **Increased demand for some goods/services**
  - **Decreased demand for other goods/services**
  - **Home delivery, drive-through windows, expanded hours**
- **Interrupted Supply/Delivery Chain**

# Who Should Plan for a Pandemic

- **All business and organizations should begin planning for a pandemic now.**
- **Lack of continuity planning can result in a cascade of failure as employers attempt to address the challenges of a pandemic when it occurs.**
- **Critical infrastructure / key resource industries have a special responsibility to plan for a pandemic.**

# Critical Infrastructure & Key Resources

85% of nation's critical infrastructure is in the hands of the private sector, the business community plays a vital role in ensuring national pandemic preparedness and response.

## Critical Infrastructure

- Food & Agriculture
- Public Health and Healthcare
- Banking & Finance
- Chemical & Hazardous Materials
- Defense Industrial Base
- Water
- Energy
- Emergency Services
- Information Technology
- Telecommunications
- Postal & Shipping
- Transportation
- National Monuments & Icons

## Key Resources

- Government Facilities
- Dams
- Commercial Facilities
- Nuclear Power Plants

Additional guidance for CI/KR business is available at:

<http://www.pandemicflu.gov/plan/pdf/CIKRpandemicInfluenzaGuide.pdf>



# How Can Influenza Spread Between People?



# How Influenza Can Spread Between People

- **Contact of infectious materials with nose, mouth, and eyes.**
- **Thought to be primarily spread by relatively large droplets traveling less than 6 feet (droplet transmission).**
- **Touching contaminated objects can also be a factor (fomite transmission).**
- **Influenza may also be spread through very small particles traveling across longer distances (aerosol transmission).**
- **The importance of each route is uncertain and may vary based upon the characteristics of the influenza strain.**



# Classifying Employee Exposure to Pandemic Influenza at Work

- **Very high exposure risk**

Exposure to high concentrations of known or suspected sources of pandemic influenza during specific medical or laboratory procedures.

- **High exposure risk**

High potential for exposure to known or suspected sources of pandemic influenza virus.

- **Medium exposure risk**

Requires frequent, close contact (within 6 feet) exposure to others.

- **Lower exposure risk (caution)**

No frequent close contact (within 6 feet) with others.

### **Very High Exposure Risk:**

- HCW performing aerosol-generating procedures on known or suspected pandemic patients.
- HCW/lab staff collecting or handling specimens from known or suspected pandemic patients.



### **High Exposure Risk:**

- HCW and support staff exposed to known or suspected pandemic patients.
- Medical transport of known or suspected pandemic patients in enclosed vehicles.
- Performing autopsies on known or suspected pandemic patient(s).

### **Medium Exposure Risk:**

- Employees with high-frequency close contact with the general population (e.g., schools, high-volume retail).

### **Lower Exposure Risk (Caution):**

- Employees who have minimal close contact with the general public and other coworkers (e.g., office workers).

# How to Protect Employees

- **Develop a disaster/business continuity plan.**
- **Promote social distancing.**
- **Encourage good hygiene practices.**
- **Develop a sick leave policy that encourages sick employees to stay at home.**
- **Use the Hierarchy of Controls:**
  - **Work Practice and Engineering Controls**
  - **Administrative Controls**
  - **Personal Protective Equipment**

# Developing a Disaster Plan

- **The most difficult step is the first one.**
- **Organize and identify a central team of people or focal point to serve as a communication source so that your employees and customers can have accurate information during the crisis.**
- **Work with community planners to integrate your pandemic plan into local and state planning, particularly if your operations are part of the Nation's critical infrastructure or key resources.**
- **Work with your employees and their union(s) to address leave, pay, transportation, travel, childcare, absence and other human resource issues.**
- **Plan for downsizing services but also anticipate any scenario which may require a surge in your services.**
- **Prepare and plan for operations with a reduced workforce.**

# Developing a Disaster Plan

- **Identify business-essential positions and people required to sustain business-necessary functions and operations. Prepare to cross-train or develop ways to function in the absence of these positions.**
- **Develop policies and practices that distance employees from each other, customers and the general public (such as e-mail, websites and teleconferences).**
- **Allow employees to work from home or to stagger their work shifts may be important as absenteeism rises.**
- **Develop a sick leave policy that does not penalize sick employees, thereby encouraging employees to stay home so that they do not infect other employees.**
- **All employees will have non-occupational risk factors at home and in in community settings that should be reduced to the extent possible.**

# Developing a Disaster Plan

- **Stockpile items** such as soap, tissue, hand sanitizer, cleaning supplies and recommended personal protective equipment.
- When stockpiling items, be aware of each product's **shelf life and storage conditions** and incorporate product rotation into your stockpile management program.
- Some employees will also have **individual risk factors** that should be considered by employers as they plan how the organization will respond to a potential pandemic (e.g., immuno-compromised individuals and pregnant women).
- Assist employees in **managing additional stressors** related to the pandemic (mental health and substance abuse).

# The Hierarchy of Controls

- **Engineering controls** involve making changes to the work environment to reduce work-related hazards.
- **Work practice controls** are procedures for safe and proper work that are used to reduce the duration, frequency or intensity of exposure to a hazard.
- **Administrative controls** include controlling employees' exposure by scheduling their work tasks in ways that minimize their exposure levels.
- **Personal Protective Equipment (PPE)** includes all clothing and other work accessories designed to create a barrier against workplace hazards.

## **Examples of Work Practice and Engineering Controls**

- **Providing resources and a work environment that promotes personal hygiene (e.g., tissues, no-touch trash cans, hand soap, hand sanitizer, disinfectants and disposable towels) and for employees to clean their work surfaces.**
- **Encouraging employees to obtain a seasonal influenza vaccine.**
- **Developing policies to minimize contacts between employees and between employees and clients or customers.**
- **Installing physical barriers (e.g., clear plastic sneeze guards).**
- **Installing a drive-through window for customer service.**
- **In some limited healthcare settings, for aerosol generating procedures, specialized negative pressure ventilation may be indicated.**



## **Examples of Administrative Controls**

- **Developing policies that encourage ill employees to stay at home without fear of any reprisals.**
- **The discontinuation of unessential travel to locations with high illness transmission rates.**
- **Consider practices to minimize face-to-face contact between employees such as e-mail, websites and teleconferences.**
- **Where possible, encourage flexible work arrangements such as telecommuting or flexible work hours to reduce the number of your employees who must be at work at one time or in one specific location.**
- **Consider home delivery of goods and services to reduce the number of clients or customers who must visit your workplace.**
- **Developing emergency communications plans. Maintain a forum for answering employees' concerns. Develop internet-based communications if feasible.**

## **Personal Protective Equipment**

- **PPE must be:**
  - **Selected based upon the hazard to the employee;**
  - **Properly fitted and some must be periodically refitted (e.g., respirators);**
  - **Conscientiously and properly worn;**
  - **Regularly maintained and replaced, as necessary;**
  - **Properly removed and disposed of to avoid contamination of self, others or the environment.**
- **Examples of personal protective equipment are gloves, goggles, face shields, surgical masks, and respirators.**

## **Personal Protective Equipment**

- **When selecting PPE, employers should consider factors such as function, fit, ability to be decontaminated, disposal, and cost.**
- **When a piece of PPE will have to be used repeatedly for a long period of time, a more expensive and durable piece of PPE may be less expensive in the long run than a disposable piece of PPE (e.g., filtering facepiece vs. elastomeric respirators or surgical masks vs. face shields).**
- **Each employer should select the combination of PPE that protects employees in their particular workplace.**
- **Wearing PPE may be physically burdensome to employees, particularly when the use of PPE is not common practice for the work task.**

# Surgical Masks

- FDA-certified surgical masks are a fluid resistant physical barrier used to prevent the transmission of splashes and splatters of body fluids.
- Surgical masks do not seal tightly to the face, do not filter small particles, and do not protect against airborne transmission.
- Uses for surgical masks:
  - Placed on sick people to limit the spread of disease.
  - Worn by healthcare workers to prevent contamination of patients wounds.
  - Worn by employees as a physical barrier to protect against splashes of large droplets of blood or body fluids.

# Respirators

- NIOSH-certified respirators are designed to reduce employee's exposure to small airborne contaminants.
- Both disposable and reusable respirators are available (filtering facepiece, surgical respirator, elastomeric respirator, PAPR).
- Particulate respirator filters (**N or R or P** & **95 or 99 or 100**). Any of the 9 filters (e.g., **N95** or **P100**) is sufficient to filter influenza.
- Dust or “Comfort” masks
- Do not use respirators with exhalation valves during medical procedures.

# Steps Every Employer Can Take

- **Encourage sick employees to stay home.**
- **Encourage good hygiene practices (hand washing, cough/sneeze etiquette).**
- **Avoid close contact where possible (at least 6 feet).**
- **Keep work surfaces clean.**
- **Discourage sharing of phones, desks, computers, etc.**
- **Minimize crowded situations (e.g. meetings).**
- **Reduce or eliminate unnecessary social interactions.**
- **Promote healthy lifestyle (nutrition, exercise, smoking cessation).**

# **Steps for Lower Exposure Risk Workplaces**

- **Follow steps for every employer.**
- **Communicate with employees about office leave policies, child care policies, telework policies.**
- **Promote hygiene and social distancing.**
- **Monitor public health communication about pandemic flu.**

# **Steps for Medium Exposure Risk Workplaces**

- **Follow steps for every employer.**
- **Avoid close contact where possible.**
- **Promote hygiene (provide cleaning supplies, hand sanitizer, tissues).**
- **Expand internet, phone-based, home delivery, drive-through window service.**
- **Consider installing sneeze guards or other engineering controls, where appropriate.**
- **Expand communication with employees about workplace policies.**
- **PPE (surgical masks, respirators, face shields, gloves).**



# **Steps for Very High/High Exposure Risk Workplaces**

- **Follow steps for every employer.**
- **Isolation rooms for aerosol generating medical procedures.**
- **Laboratory work in BSL3 facilities.**
- **Consider installing sneeze guards, where appropriate.**
- **Promote hygiene (provide cleaning supplies, hand sanitizer, tissues).**
- **Expand communication with employees about workplace policies.**
- **Respirators:**
  - **N95 or better for most situations.**
  - **SAR/PAPR for aerosol generating medical procedures.**
  - **Surgical Respirator when both respiratory protection and fluid resistance are needed.**
- **PPE (gloves, gowns, face shields).**

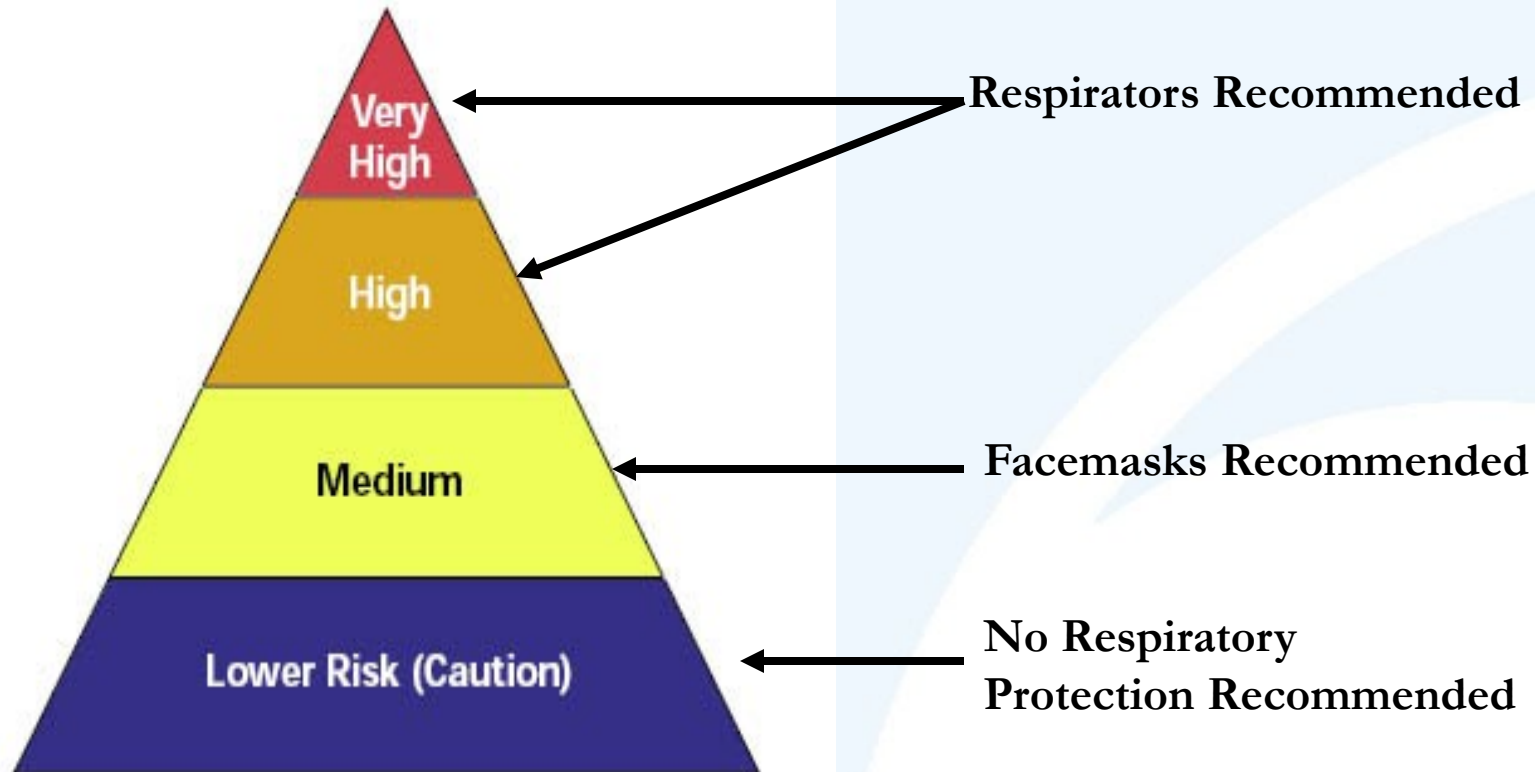
# **Employees Who Live/Work Abroad**

- **Other geographic regions have different influenza seasons.**
- **U.S. Department of State will have limited ability to assist Americans living or traveling abroad.**
- **Travel to/within some countries may not be possible, safe, or medically advisable during a pandemic.**
- **Restrictions on domestic/international travel may happen unexpectedly and quickly.**
- **Plan to be self-sufficient if the employee(s) must shelter-in-place (food, water, medical supplies, personal protective equipment).**

# **Proposed Respirator and Facemask Stockpiling Guidance**

- **Federal Register notice published May 9, 2008.**
- **Public comment process closes July 8, 2008.**
- **Encourages employers to stockpile respirators and facemasks so they can protect employees during a pandemic.**
- **Discusses various types of respirators available for use.**
- **Discusses appropriate uses for facemasks.**
- **Provides estimates of the quantity of N95 respirators and/or facemasks employers should stockpile.**

# Occupational Risk Pyramid for Pandemic Influenza



# Device Estimates for Employees

Occupational setting	Proportion of medium or higher risk employees	Number of respirators or facemasks per employee per work shift		Number of respirators or facemasks per employee for a pandemic (120 work days)	
		N95 Respirators (high or very high risk)	Facemasks (medium risk)	N95 Respirators (high or very high risk)	Facemasks (medium risk)
Healthcare					
Hospital	33%	4	0	240	0
Outpatient office/clinic	67%	4	0	480	0
Long term care	25%	1	3	120	360
Home healthcare	90%	2	4	240	480
Emergency medical services	100%	8	0	960	0
First responders					
Law enforcement	90%	2	2	240	240
Corrections	90%	1	3	120	360
Fire department (non-EMS, career and volunteer)	90%	2	2	240	240
Medium risk employees	NA	0	2	0	240

# Sample Respirator Stockpiling Calculations

## Using disposable N95 respirators

- 4 N95s / HCW / shift X 120 pandemic workdays  
= 480 N95s per exposed HCW.
- 480 N95s @ \$0.50/respirator = \$240 per employee protected

**or**

## Using reusable elastomeric respirators

- 1 reusable elastomeric respirator + 3 sets of filters per exposed employee.
- 1 respirator @ \$25 + 3 sets of filters @ \$5 set = \$40 per employee protected

# Facemasks Estimates for Patients and Other Contacts in High Exposure Risk Settings

Occupational setting	Facemasks needed
<b>Healthcare</b>	
Hospital (inpatient)	2 per patient per day
Essential visitors	3 per visitor per day
Emergency Rooms	1 per ill person
Outpatient office/clinic	2 per patient visit
Long term care	1 per patient per day
Home healthcare	1 per patient visit
Emergency medical services	1 per ill person
<b>First responders</b>	
Law enforcement	1 per ill person
Corrections	2 per ill inmate per day
Fire department	1 per ill person

# Additional Sources of Information

- [www.pandemicflu.gov](http://www.pandemicflu.gov)
- [www.cdc.gov/flu/](http://www.cdc.gov/flu/)
- [www.osha.gov](http://www.osha.gov)



The background of the entire image is a close-up, slightly blurred view of the American flag, showing the stars and stripes. The stars are in the upper left, and the stripes run diagonally across the frame.

# OSHA

adds value to business,  
work and life.